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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Toshikazu SEGAWA et al

531 Rec'd PC

25 OCT 2001

S. N.

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For: METHOD OF PRODUCING PHASE MASK FOR PROCESSING OPTICAL FIBER AND
OPTICAL FIBER WITH BRAGG DIFFRACTION GRATING FABRICATED BY USING
THE OPTICAL FIBER-PROCESSING PHASE MASK

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please make the following amendments to this application
prior to examination thereof:

In the Specification:

Page 10, lines 9-11, please replace this paragraph with the
following:

Figs. 2(a) and 2(b) comprise diagrams showing an electron
beam writing method used in the method of producing a phase mask,
and also showing a section of the phase mask.

Page 10, lines 15-19, please replace these paragraphs with
the following:

Figs. 4(a) through 4(h) are sectional views showing steps of
an embodiment of the phase mask producing method according to the
present invention.

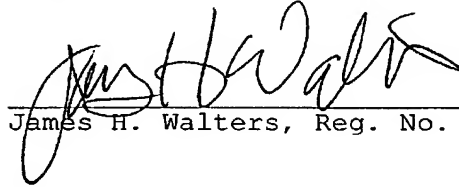
Figs. 5(a) through 5(c) comprise diagrams for describing
optical fiber processing and a phase mask used therefor.

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REMARKS

The above amendments are presented in order to place the application into a format consistent with U.S. practice. A markup sheet is provided at the end of this document to illustrate the changes made for the Examiner.

Respectfully submitted,



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- 10 -531 Rec'd PCT.

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and a process in which repeating pattern data of grating-shaped grooves and strips, which have different pitches, are written in juxtaposition with each other.

5

Brief Description of the Drawings

Fig. 1 is a diagram for describing the principle that the connection error at the joint between patterns is minimized by the present invention.

Figs. 2(a) and 2(b) comprise diagrams

~~Fig. 2 is a diagram~~ showing an electron beam writing method used in the method of producing a phase mask, and also showing a section of the phase mask.

Fig. 3 is a diagram showing the way in which a pattern having a varying pitch is written by connecting together patterns having different pitches.

Figs. 4(a) through 4(h) are views

~~Fig. 4 is a sectional view~~ showing steps of an embodiment of the phase mask producing method according to the present invention.

Figs. 5(a) through 5(c) comprise diagrams

~~Fig. 5 is a diagram~~ for describing optical fiber processing and a phase mask used therefor.

Fig. 6 is a diagram schematically showing the way in which a phase mask pattern is written with an electron beam by using an electron beam writing system.

Fig. 7 is a diagram showing the way in which a plurality of patterns having different pitches are written by multiple writing operations carried out in opposite directions.

Fig. 8 is a diagram showing the way in which a plurality of patterns having different pitches are written

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